

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Ceweles Seed Company

Whereas, THERE HAS BEEN PRESENTED TO THE
Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND **WHEREAS**, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *seventeen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'XK-505'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington this 18th day of January in the year of our Lord one thousand nine hundred and seventy-four

Attest:

R. J. Rollin
Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

Earl L. Butz
Secretary of Agriculture

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: See Reverse.

1. VARIETY NAME OR TEMPORARY DESIGNATION XK-505	2. KIND NAME Soybean	FCR OFFICIAL USE ONLY PV NUMBER 7137	
3. GENUS AND SPECIES NAME Glycine max	4. FAMILY NAME (Botanical) Leguminosae m - m	FILING DATE 3-16-71	TIME 10 A.M.
	5. DATE OF DETERMINATION October 1970	FEE RECEIVED \$ 250 \$ 250 \$ 250	BALANCE DUE \$ - \$ - \$ -
6. NAME OF APPLICANT(S) Teweles Seed Co. by Robert L. Teweles	7. ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code) 1600 Oregon Street Muscatine, Iowa 52761	8. TELEPHONE AREA CODE AND NUMBER 319-263-0142	
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: (Corporation, partnership, association, etc.) Teweles Seed Company		10. STATE OF INCORPORATION Wisconsin	11. DATE OF INCORPORATION I 1911
12. Name and mailing address of applicant representative(s), if any, to serve in this application and receive all papers: Mr. Robert L. Teweles Teweles Seed Co. 1600 Oregon St. Muscatine, Iowa 52761			

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

- ☒ 13A. Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.)
- ☒ 13B. Exhibit B, Botanical Description of the Variety
- ☒ 13C. Exhibit C, Objective Description of the Variety
- ☒ 13D. Exhibit D, Data Indicative of Novelty
- ☒ 13E. Exhibit E, Statement of the Basis of Applicant's Ownership

14A. Does the applicant(s) specify that seed of this variety be sold by variety name only as a class of certified seed? (See Section 83(a). (If "Yes," answer 14B and 14C below.) ☐ YES ☒ NO

14B. Does the applicant(s) specify that this variety be limited as to number of generations? ☐ YES ☒ NO

14C. If "Yes," to 14B, how many generations of production beyond breeder seed? ☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

The applicant declares that a viable sample of basic seed of this variety will be deposited upon request before issuance of a certificate and will be replenished periodically in accordance with such regulations as may be applicable.

The undersigned applicant(s) of this sexually-reproduced novel plant variety believes that the variety is distinct, uniform, and stable as required in Section 41 and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant is informed that false representation herein can jeopardize protection and result in penalties.

January 25, 1973
(DATE)

Robert L. Teweles
(SIGNATURE OF APPLICANT)

(DATE)

(SIGNATURE OF APPLICANT)

INSTRUCTIONS

GENERAL: Send an original copy of the application, exhibits and \$250.00 fee to U.S. Dept. of Agriculture, Agricultural Marketing Service, Grain Division, 6525 Belcrest Road, Hyattsville, Maryland 20782. (See Section 180.175 of the regulations and rules of practice.) Retain one copy for your files. All items on the face of the Form are self-explanatory unless noted below.

ITEM

- 5 Insert the date the applicant determined that he had a new variety based on the definition in Section 41 (a) of the Act and decision is made to increase the seed.
- 13a First, give the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method. Second, give the details of subsequent stages of selection and multiplication. Third., indicate the type and frequency of variants during reproduction and multiplication and state how these variants may be identified. Fourth, provide evidence on stability.
- 13b First, give any special characteristics of the seed and of the plant as it passes through the seedling stage, flowering stage and the fruiting stage. Second, describe the mature plant and compare it with a similar commercial variety grown under the same conditions, and indicate the differences.
- 13c A supplemental form will be furnished. by the. PVPO to describe in detail a variety for each kind of seed.
- 13d Provide complete data indicative of novelty. Seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty may be submitted. Seeds submitted may be sterile;
- 13e Indicate whether applicant is the actual breeder, the employer of the breeder, the owner through purchase or inheritance, etc.

12A - XK-505 = C1253 (Blackhawk x Harosoy) x Kent

- 1967-68 Selected single plant from the variety Calland showing much earlier maturity, from a greenhouse growout.
- 1968 Preliminary trial data indicated no segregation of this line for plant type or seed quality. Bulk seed from five rows in preliminary trials for increase and testing.
- 1969 Line increased in Iowa and tested in Wisconsin and Indiana.
- 1970 Line further increased in Illinois and tested in Wisconsin, Indiana and Illinois, data were satisfactory (yield and agronomic), the line was assigned name of XK-505.

12B - Botanical Description

I - Special characteristics of the seed from planting to fruiting stage; This variety is unique in its ability to respond to differential photo - period (light and temperature) areas. It will mature at Hector, Minnesota compared to Chippewa 64, while at Clinton, Wisconsin and Kentland, Indiana it has a normal maturity much later than Chippewa 64; more like Beeson. Plant height is reduced as the variety is moved north while at Kentland, Indiana and Beeman, Iowa this variety would be classified as a tall variety.

II - Mature plant Characteristics.

This variety resembles Calland in foliar appearance but matures 10 days earlier. It is unique from the following Group II varieties as follows:

	<u>Hilum Color</u>	<u>Plant Pubescence</u>	<u>Plant Height</u>	<u>Disease Resistance</u>
XK-505	Black	Brown	39"	Phytophthora res.
vs. Amsoy	Yellow	Grey	36"	" suscep
vs. Corsoy	Yellow	"	34"	" "
vs. Beeson	imperfect black	"	38"	" resis.

OBJECTIVE DESCRIPTION OF VARIETY
SOYBEAN (GLYCINE MAX)

INSTRUCTIONS: See Reverse.

NAME OF APPLICANT(S) L. Teweles Seed Company by Wm. H. Davis	FOR OFFICIAL USE ONLY
ADDRESS (Street and No., or R.F.D. No.; City, State, and ZIP Code) Research Central Route #1 Clinton, Wisconsin 53525	PVPO NUMBER 7137
	VARIETY NAME OR TEMPORARY DESIGNATION XK-505

Place the appropriate number that describes the varietal character of this variety in the boxes below.

1. SEED SHAPE: <input type="checkbox"/> 1 = SPHERICAL <input type="checkbox"/> 2 = SPHERICAL FLATTENED <input type="checkbox"/> 3 = ELONGATE <input type="checkbox"/> 4 = OTHER (Specify)																			
2. SEED COAT COLOR: <input type="checkbox"/> 1 = YELLOW <input type="checkbox"/> 2 = GREEN <input type="checkbox"/> 3 = BROWN <input type="checkbox"/> 4 = BLACK <input type="checkbox"/> 5 = OTHER (Specify)	SHADE: <input type="checkbox"/> 1 = LIGHT <input type="checkbox"/> 2 = MEDIUM <input type="checkbox"/> 3 = DARK																		
3. SEED COAT LUSTER: <input type="checkbox"/> 1 = DULL <input type="checkbox"/> 2 = SHINY	4. SEED SIZE <input type="checkbox"/> 1 <input type="checkbox"/> 8 GRAMS PER 100 SEEDS																		
5. HILUM COLOR: <input type="checkbox"/> 1 = BUFF <input type="checkbox"/> 2 = YELLOW <input type="checkbox"/> 3 = BROWN <input type="checkbox"/> 4 = GRAY <input type="checkbox"/> 5 = IMPERFECT BLACK <input type="checkbox"/> 6 = BLACK <input type="checkbox"/> 7 = OTHER (Specify)	SHADE: <input type="checkbox"/> 1 = LIGHT <input type="checkbox"/> 2 = MEDIUM <input type="checkbox"/> 3 = DARK																		
6. COTYLEDON COLOR: <input type="checkbox"/> 1 = YELLOW <input type="checkbox"/> 2 = GREEN	7. LEAFLET SIZE (See Reverse): <input type="checkbox"/> 1 = SMALL <input type="checkbox"/> 2 = MEDIUM <input type="checkbox"/> 3 = LARGE																		
8. LEAFLET SHAPE: <input type="checkbox"/> 1 = OVATE <input type="checkbox"/> 2 = OBLONG <input type="checkbox"/> 3 = LANCEOLATE <input type="checkbox"/> 4 = ELLIPTICAL <input type="checkbox"/> 5 = OTHER (Specify)																			
9. LEAF COLOR (See reverse): <input type="checkbox"/> 1 = LIGHT GREEN <input type="checkbox"/> 2 = MEDIUM GREEN <input type="checkbox"/> 3 = DARK GREEN	10. FLOWER COLOR: <input type="checkbox"/> 1 = WHITE <input type="checkbox"/> 2 = PURPLE <input type="checkbox"/> 3 = OTHER (Specify)																		
11. POD COLOR: <input type="checkbox"/> 1 = TAN <input type="checkbox"/> 2 = BROWN <input type="checkbox"/> 3 = BLACK	12. POD SET: <input type="checkbox"/> 1 = SCATTERED <input type="checkbox"/> 2 = CONCENTRATED																		
13. PLANT PUBESCENCE COLOR: <input type="checkbox"/> 1 = GRAY <input type="checkbox"/> 2 = BROWN <input type="checkbox"/> 3 = OTHER (Specify)	SHADE: <input type="checkbox"/> 1 = LIGHT <input type="checkbox"/> 2 = MEDIUM <input type="checkbox"/> 3 = DARK																		
14. PLANT TYPES (See Reverse): <input type="checkbox"/> 1 = SLENDER <input type="checkbox"/> 2 = BUSHY <input type="checkbox"/> 3 = INTERMEDIATE	15. PLANT HABIT: <input type="checkbox"/> 1 = DETERMINATE <input type="checkbox"/> 2 = INDETERMINATE <input type="checkbox"/> 3 = OTHER (Specify)																		
16. HYPOCOTYL COLOR: <input type="checkbox"/> 1 = GREEN <input type="checkbox"/> 2 = PURPLE	17. SEED PROTEIN: <input type="checkbox"/> 1 = A <input type="checkbox"/> 2 = B																		
18. NUMBER OF DAYS TO FLOWERING (Place a zero in first box (e.g. <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 9) when days are 9 or less.) <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	19. MATURITY GROUP: <input type="checkbox"/> 1 = 00 <input type="checkbox"/> 2 = 0 <input type="checkbox"/> 3 = I <input type="checkbox"/> 4 = II <input type="checkbox"/> 5 = III <input type="checkbox"/> 4 <input type="checkbox"/> 6 = IV <input type="checkbox"/> 7 = V <input type="checkbox"/> 8 = VI <input type="checkbox"/> 9 = VII <input type="checkbox"/> 10 = VIII																		
20. SIZE OF 10 DAY OLD SEEDLING GROWN UNDER CONSTANT LIGHT (Growth Chamber) AT 25° C. (Place a zero in first box (e.g. <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 2) when size is 9 mm. or less.) <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> MM. LENGTH OF SEEDLING <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> MM. LENGTH OF COTYLEDON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> MM. WIDTH OF COTYLEDON																			
21. DISEASE: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) <table border="0"><tr><td><input type="checkbox"/> 2 BACTERIAL PUSTULE</td><td><input type="checkbox"/> 0 SOYBEAN CYST</td><td><input type="checkbox"/> 2 DOWNY MILDEW</td><td><input type="checkbox"/> 0 PURPLE STAIN</td><td><input type="checkbox"/> 0 POD AND STEM BLIGHT</td><td><input type="checkbox"/> 0 ROOT KNOT</td></tr><tr><td><input type="checkbox"/> 2 FROGEYE</td><td><input type="checkbox"/> 0 STEM CANKER</td><td><input type="checkbox"/> 2 PHYTO-PHTHORA</td><td><input type="checkbox"/> 0 BROWN STEM ROT</td><td><input type="checkbox"/> 0 TARGET SPOT</td><td><input type="checkbox"/> 0 BROWN SPOT</td></tr><tr><td><input type="checkbox"/> 0 BUD BLIGHT</td><td><input type="checkbox"/> 0 WILDFIRE</td><td><input type="checkbox"/> 0 RHIZOCTONIA ROT</td><td><input type="checkbox"/> 0 OTHER (Specify)</td><td></td><td></td></tr></table>		<input type="checkbox"/> 2 BACTERIAL PUSTULE	<input type="checkbox"/> 0 SOYBEAN CYST	<input type="checkbox"/> 2 DOWNY MILDEW	<input type="checkbox"/> 0 PURPLE STAIN	<input type="checkbox"/> 0 POD AND STEM BLIGHT	<input type="checkbox"/> 0 ROOT KNOT	<input type="checkbox"/> 2 FROGEYE	<input type="checkbox"/> 0 STEM CANKER	<input type="checkbox"/> 2 PHYTO-PHTHORA	<input type="checkbox"/> 0 BROWN STEM ROT	<input type="checkbox"/> 0 TARGET SPOT	<input type="checkbox"/> 0 BROWN SPOT	<input type="checkbox"/> 0 BUD BLIGHT	<input type="checkbox"/> 0 WILDFIRE	<input type="checkbox"/> 0 RHIZOCTONIA ROT	<input type="checkbox"/> 0 OTHER (Specify)		
<input type="checkbox"/> 2 BACTERIAL PUSTULE	<input type="checkbox"/> 0 SOYBEAN CYST	<input type="checkbox"/> 2 DOWNY MILDEW	<input type="checkbox"/> 0 PURPLE STAIN	<input type="checkbox"/> 0 POD AND STEM BLIGHT	<input type="checkbox"/> 0 ROOT KNOT														
<input type="checkbox"/> 2 FROGEYE	<input type="checkbox"/> 0 STEM CANKER	<input type="checkbox"/> 2 PHYTO-PHTHORA	<input type="checkbox"/> 0 BROWN STEM ROT	<input type="checkbox"/> 0 TARGET SPOT	<input type="checkbox"/> 0 BROWN SPOT														
<input type="checkbox"/> 0 BUD BLIGHT	<input type="checkbox"/> 0 WILDFIRE	<input type="checkbox"/> 0 RHIZOCTONIA ROT	<input type="checkbox"/> 0 OTHER (Specify)																

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant shape	Calland	Petiole angle	XK-505
Leaf shape	Calland	Seed size	Amsoy
Leaf color	Calland	Seed shape	Calland
Leaf surface	Calland	Seedling pigmentation	Calland

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY:

VARIETY	NO. OF DAYS TO MATURITY	LODGING SCORE	PLANT HEIGHT	LEAF SIZE		CONTENT		AVERAGE NO. OF PODS PER PLANT	IODINE NO.
				Width	Length	Protein	Oil		
Submitted	117	1.5	39"	-	-	42.0	20.4%	-	-
Name of similar variety Amsoy	115	1.8	39"	-	-	38.7	21.6	-	-

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for completing this form:

1. Scott, Walter O. and Samuel R. Aldrich, 1970, Modern Soybean Production, The Farmer Quarterly.
2. Norman, A. G., 1963, The Soybean: Genetics, Breeding, Physiology, Nutrition, Management.
3. McKie, J. W., and K. L. Anderson, 1970, The Soybean Book.

LEAF COLOR: Nickerson's or any recognized color fan may be used to determine the leaf color of the described variety. The following Soybean varieties may be used as a guide to identify the colors listed on the form.

COLOR	VARIETY
Light Green	"Ada"
Medium Green	"Wilkin"
Dark Green	"Swift"

LEAF SIZE: The following varieties may be used as a guide to identify the relative size leaves.

SIZE	VARIETY
Small	"Amsoy"
Medium	"Bonus"
Large	"Anoka"

PLANT TYPE: The following varieties may be used as a guide to identify the plant type.

TYPE	VARIETY
Slender	"Vansoy"
Intermediate	"Wirth"
Bushy	"Adelphia"

No. 7137 (XK-505)
EXHIBIT D

XK-505 most resembles Calland in plant and seed characteristics. These two varieties have similar plant type, pubescence color, flower odor, and mature plant characteristics. The major distinguishing difference is as follows:

<u>CHARACTER DIFFERENCE</u>		
<u>VARIETY</u>	<u>MATURITY</u>	
XK-505	Maturity Group II	Matures 10 days earlier than Calland
Calland	Maturity Group III	

12C - Form available later

12D - See enclosed data sheet

12E - Ownership rights are granted to and held by the L. Teweles Seed Company. Actual breeder's are^x Dr. A. H. Probst, U.S.D.A., Dr. Norman R. Bradner. * (Honorary credit given to source of material.)

SOYBEAN

'XK-505'

13A. Exhibit A:

'XK-505' originated as a single plant selection from the variety 'Calland'. Preliminary trial data indicated no segregation of this line for plant type or seed quality. Seed was increased in 1969 and 1970 and assigned the name, 'XK-505'.

13B. Exhibit B:

This variety is unique in its ability to respond to differential photo-period (light and temperature) areas. It will mature at Hector, Minnesota with 'Chippewa 64', while at Clinton, Wisconsin and Kentland, Indiana it will mature much later; more like Beeson. Plant height is reduced as the variety is moved North. 'XK-505' resembles 'Calland' in foliar appearance but matures 10 days earlier. It differs from 'Amsoy', 'Corsoy', and 'Beeson', (other maturity Group II varieties) in one or more characteristics.

13C. Exhibit C:

Seed shape	:	Spherical
Seed color	:	Medium yellow
Seed luster	:	Dull
Seed size	:	18 g/100 seeds
Hilum color	:	Light black
Cotyledon color	:	Yellow
Protein content	:	20.4 percent ('Amsoy', 38.7 percent)
Oil content	:	20.4 percent ('Amsoy', 21.6 percent)
Leaflet size	:	Small
Leaflet shape	:	Oblong
Leaflet color	:	Dark green
Flower color	:	Purple
Pod color	:	Brown
Pod set	:	Scattered
Plant pubescence color	:	Medium brown
Habit	:	Intermediate and indeterminate
Hypocotyl color	:	Purple

'XK-505'
Soybean

PV # 7100037
2

13C. Exhibit C (continued):

Maturity group	:	II - 113 days ('Calland' 125 days)
Lodging score	:	1.5 ('Calland' 2.4)
Height	:	99 cm. ('Calland' 99 cm.)
Disease	:	Resistant to Bacterial Pustule, Downy Mildew, and Phytophthora Root Rot

13D. Exhibit D:

'XK-505' most resembles 'Calland' in plant and seed characteristics. These two varieties have similar plant type, pubescence color, flower color, and mature plant characteristics. However, 'XK-505' is different because it matures 10 days earlier than 'Calland' and is in maturity Group III whereas XK-505 is in maturity Group II.

13E. Exhibit E:

Applicant is the actual breeder/ownership rights are granted to and held by the L. Teweles Seed Company.